Study Demonstrates Accuracy and Reliability of ECG Interpretation by Physicians is Limited

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Description

Incorporating an electrocardiogram (ECG) during pre-participation screening for athletes has demonstrated a reduction in incidence of sudden cardiac death (SCD); however, it remains controversial in the United States due to minimal usage and high false-positive readings. New research presented this week at the AMSSM Annual Meeting in San Diego, Ca., suggests this is due to the challenges in the accuracy and reliability of physicians' ability to read ECGs.

Citations

American Medical Society for Sports Medicine's 22nd Annual Meeting

Newswise — SAN DIEGO, CA – Incorporating an electrocardiogram (ECG) during pre-participation screening for athletes has demonstrated a reduction in incidence of sudden cardiac death (SCD); however, it remains controversial in the United States due to minimal usage and high false-positive readings. New research presented this week suggests this is due to the challenges in the accuracy and reliability of physicians' ability to read ECGs.

Francis G. O'Connor MD, MPH, Medical Director, Consortium for Health And Military Performance (CHAMP) and Professor of Military and Emergency Medicine, Uniformed Services University of the Health Sciences, will present research entitled, "Reliability and validity of clinician electrocardiogram interpretation using the European Society of Cardiology criteria for pre-participation screening" on Friday, April 19, 2013 at the American Medical Society for Sports Medicine's 22nd Annual Meeting in San Diego, Ca. The study was conducted in conjunction with AMSSM member Charles Magee, MD, MPH, and other researchers of the Uniformed Services University of the Health Sciences.

Both cardiologists and primary care physicians, including primary care sports medicine physicians, were asked to interpret 85 different ECGs using the European Society of Cardiology (ESC) guidelines. Notably, 30 percent of the ECGs showed abnormal common disorders that cause sudden cardiac death. Agreement among physicians was moderate, demonstrating that interpretation of ECGs in a population representative of athletes by board certified primary care and cardiology specialists is limited.

Currently, ECGs are not a required component of mass pre-participation screenings for athletes; however, adding this screening to the pre-participation exams could potentially help identify predictors of sudden cardiac death, the number one killer of athletes. Dr. O'Connor stated that "improvement in diagnostic accuracy of ECG interpretation is warranted before considering the recommendation of routine ECG screening in athletes." Dr. O'Connor added, "Until then, we need to recognize that identifying abnormal from normal is not as easy as it may seem."

A Colonel in the United States Army, Dr. O'Connor is a graduate of the United States Military Academy at West Point, and prior to his recent posting at Uniformed Services University in the Department of Military Medicine, he served one year as a Command Surgeon with Special Operations in the Middle East. Dr. O'Connor has authored more than 30 articles in scientific journals and numerous book chapters/technical reports/health promotion resources for the military. In addition, Dr. O'Connor is the editor of four texts on sports medicine, including the Textbook of Running Medicine and the recently published ACSM's Sports Medicine: A Comprehensive Review. Dr. O'Connor is a past President of AMSSM.

Timing of the study coincides with global advances in ECG interpretation happening this week. On Monday, April 15, 2013, AMSSM, in association with BMJ Learning and the British Journal of Sports Medicine, released new online training modules developed and written by international experts in sports medicine and sports cardiology to guide physicians on how to recognize ECG changes that indicate problems rather than healthy cardiac adaptation. The tutorials, which are free to any doctor around the globe, thanks to the backing of AMSSM and FIFA, aim to teach physicians how to read heart monitor tracings (ECGs) and spot abnormalities linked to potentially fatal disorders.

About the AMSSM: The AMSSM is a multi-disciplinary organization of sports medicine physicians whose members are dedicated to education, research, advocacy, and the care of athletes of all ages. Founded in 1991, the AMSSM is now comprised of more than 2,300 sports medicine physicians whose goal is to provide a link between the rapidly expanding core of knowledge related to sports medicine and its application to patients in a clinical setting. www.amssm.org